The Longest Delay

By Lt. Stephen Allum

I had completed the best possible JO tour with the VS-24 Scouts: two combat cruises filled with moonless, overcast night traps, unforgettable port-call memories, and other squadron functions to reminisce on later in life. However, my last encounter with the "War Hoover" was anything but enjoyable.

It was late July 2003, and I was scheduled to fly with a good friend—call sign "Mr. Gadget" for this article. Our typical "routine, good deal" flight was scheduled to last only a couple of hours, and then return to NAS Jacksonville. What could go wrong? It was morning and VFR. We were two senior JOs with plenty of S-3 experience, and squadron NATOPS instructors. The first part of the flight went as planned, with no problems or surprises. Then we encountered the dangerous part of the flight: the airnav home.

When we reached our final cruising altitude of FL190, the No. 1 bleed-leak light came on. This light means an over-temperature condition in excess of 127 degrees Celsius in the vicinity of an applicable bleed line. This condition generally is caused by a broken or cracked line, seal or fire in the environmental-control system (ECS) compartment. We secured the No. 1 bleed-air switch according to NATOPS. But, the second we closed the No. 1 bleed-air system, the No. 2 bleed-leak and APU bleed-leak lights illuminated, while smoke entered the cockpit. We continued with the remaining immediate-action items of donning our O2 masks and securing the No. 2 bleed-air switch.

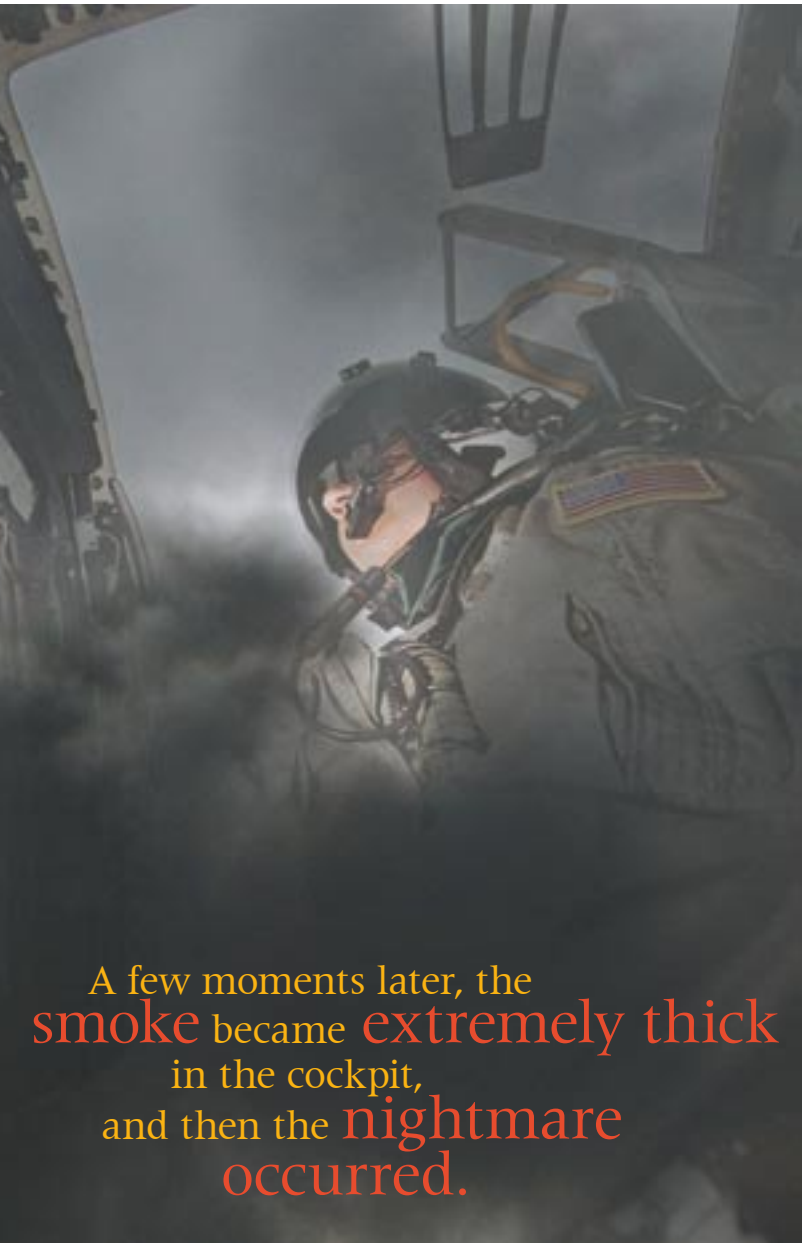
While watching the clock, waiting for the lights to extinguish and smoke to clear, I remembered this warning in NATOPS: "Simultaneous illumination of the No. 1 and No. 2 bleed-leak lights may indicate an ECS compartment fire. In this event, the crew should be alert for secondary indications that would confirm a fire, such as smoke or fumes in the cockpit." Mr. Gadget reached for his PCL, and then the fun really began.

Waiting for at least one of the three bleed-leak lights to extinguish, the No. 1 hyd-level light illuminated (which meant less than two gallons of fluid remained in the No. 1 system). Smoke continued to fill the cockpit, so Mr. Gadget and I began to perform more boldface procedures for smoke or fumes removal, including securing the air conditioning, opening the auxiliary vent, and dumping cabin pressure. The results were limited, and the smoke remained. We had reached a four-minute wait in the PCL

on the bleed-leak procedure for the lights to extinguish.

Then I made the call I thought I never would have to say, "Atlanta center…Scout 7…declaring an emergency…we've got some bleed problems and smoke in the cockpit."

I moved the transponder dial to "EMER," and Mr. Gadget dialed in 7700. Then the master-caution panel illuminated the cockpit with more "attention-getting" lights, including: wing unlock, speedbrake caution, trailing-edge flaps locked, and the transition light in the landing-gear handle (handle still in the up position).



While looking down at the master-caution panel—I was reminded of Chevy Chase's house in "Christmas Vacation"—I knew we were in serious trouble. I saw the ECS-fire light. Center did an outstanding job vectoring and descending us to our nearest divert and satisfying all our requests, but, unfortunately, the situation only got worse.

While in the descent to a lower altitude, we saw the No. 2 hydraulic gauge decrease to zero, followed shortly by more stick pressure on the controls to maintain straight and level. I performed the aircraft-failure-to-respond-to-control-inputs boldface. But, more smoke began to enter the cockpit, and the jet went uncommanded into its emergency-flight-control system (EFCS). The EFCS is an automatic changeover that takes place when total hydraulic pressure drops below 800 psi. It is completely mechanical and, with the aid of the independent trim system, is like driving your car with no power steering.

This was not our day. I told the warrior sitting beside me, "We're in EFCS, and I'm securing the hydraulic servos."

The jet still was controllable, but we avoided big angle of banks and high airspeeds. Center assisted us with a long straight-in, so we could lose altitude without using speedbrakes, maintain control, and finish required checks for emergency extension of gear and flaps. As if we weren't busy enough, our navigation and several instrument displays quit working; then, our radios and ICS went silent. Mr. Gadget yelled me a vector to our intended point of landing (with his hand-held GPS on his knee), but we didn't make it.

A few moments later, the smoke became extremely thick in the cockpit, and then the nightmare occurred. The control stick lost all stiffness and went completely limp in all directions, while the aircraft remained in straight and level flight. The stick had no inputs to any of the flight controls.

You have got to be kidding me! I looked up and saw that the hydraulic servos remained in the off position and that we were passing 10,000 feet. We had a failure of the flight controls while flying in EFCS? Where is that EP in the PCL? What else could we do to extinguish this fire and save the aircraft?

Realizing we were descending, and the jet relatively was straight and level at a fairly slow and safe airspeed,

I looked at my COTAC, while moving the control stick in all directions (the jet remained level), and just shook my head "no." He signaled with his arm—a signal I barely saw through the smoke—for the ejection.

I waited for his left arm to get in position, and then I leaned back, pulled the ejection handle, and had the longest .96-second delay in my life.

Time compression had us believing our seats had failed. Now what? Would I have to blow the canopies, use the emergency-restraint release, and jump out, pulling my D-ring? I then saw an orange flash, heard a loud bang, and got propelled out of the aircraft. After being beaten and tossed around in the airstream, everything suddenly went completely quiet and in slow motion.

I looked up and saw a good chute. I inflated my lobes, and then looked down—I saw trees. "Oh, this is going to hurt," I thought.

I kept my visor down, mask and gloves on, and secured my seat pan. Looking to my right, I saw Mr. Gadget in his chute with his hands up. Wanting to land with him, I engaged the steering risers, pulled down on the right handle, and began to travel toward him. Unfortunately, the wind at altitude had me pass behind him and to his right just before hitting the ground. As I looked up at the horizon, I heard tree branches snapping, and I felt a few tugs to the left and right. My feet hit, I released my Koch fittings, and rolled on the ground to a stop.

The flight gear and patches came off, while I reached for the beacon in the seat pan. "Wait," I thought, "I'm in the U.S. not in combat."

I pulled out the "triple beacon radio" (unfortunately, I didn't triangulate our position) and got in comms with Mr. Gadget. Thank God, he was all right. I grabbed my whistle and blew in short bursts to help guide him to my position. He soon walked up with only minor abrasions on his face and arms.

Once again, Mr. Gadget came through. He reached in his pocket, pulled out his cellphone, acquired a signal, and called the squadron.

We had gone down in Georgia's thick pine forest. We gathered our gear, walked to higher ground to a more open area for visual rescue, and waited for a helicopter.

Throughout the next four hours, we lit several smoke and flare signals, but the smoke dissipated each time in the trees before rising high enough to be effective. I referenced north with the compass, drank water, and got in touch with several civilian aircraft on the radio, but they soon got out of range. Mr. Gadget, however, was able to reach the Georgia State Patrol rescue helicopter on the radio while I got more smokes ready. It was the orange and white parachute stretched over trees and shrubs, though, that acquired their sight. What a relief! They vectored a search team through the woods to us, then rushed us to the nearest hospital.

The total time from declaring the emergency with ATC to our ejection was only about four minutes. A lot of NATOPS procedures were performed in the jet and crew coordination was essential. A former skipper explained it best this way, "I have an opportunity for self and mishap examination that will allow me to formulate my thoughts on leadership. Use this as a learning experience to teach others. Realize sometimes you can do everything right and still lose the jet." Yet, another friend (in his own caring ways) explained that I only needed a couple of more jumps to acquire my jump wings. Hooyah!

Everyone did their part to make sure we returned to our friends and families, and we are forever grateful. But, special thanks go out to HS-3 for flying us back home. Even off the boat, they still provide top-notch search and rescue.

Lt. Allum flew with VS-24 at the time of the mishap. He now flies with VAQ-129.

AMB Analysis

By Lt. Jon Styers

Postflight analysis by the AMB revealed that a major fire occurred in the ECS compartment. In the immediate vicinity of the heat-source center are various wiring harnesses, hydraulic lines, bleed-air ducting, and an APU fuel line. As the fire grew, damage spread forward and possibly into the aircraft tunnel. Further investigation detected a hydraulic leak, which could have been atomized under pressure, resulting in a mist that can be ignited at temperatures well below its flash point. The atomized fluid was ignited by heat from the hot No. 1 bleed-air duct, resulting in an uncontrollable fire in the ECS compartment.

Lt. Styers was the VS-24 aviation safety officer. He now flies with VT-10.